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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,907	03/29/2001	Kunihiro Shima	108384-00016	6983

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EXAMINER
WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
1742	10

DATE MAILED: 10/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

10

Office Action Summary	Application No.	Applicant(s)	
	09/787,907	SHIMA, KUNIHIRO	
	Examiner	Art Unit	
	Harry D Wilkins, III	1742	

-- The MAILING DATE of this communication appears on the cover sh et with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). 7 .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *machine translation of JP docs* .

DETAILED ACTION

1. Claims 1-8 are pending. Claims 1 and 2 have been amended and claims 4-8 have been added.

2. The rejection under 35 USC 112, 2nd paragraph has been withdrawn in view of the amendment filed 29 August 2002.

3. The double patenting rejection has been withdrawn in view of the abandonment of the copending application 09/787,440.

4. The rejections under 35 USC 103 based on the Shibata reference have been withdrawn in view of the declaration under 37 CFR 1.132 filed on 29 August 2002.

5. However, new grounds of rejection are presented below.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 4 and 5 is rejected under 35 U.S.C. 102(b) as being clearly anticipated Sato et al (JP 09-115355).

Sato et al teach (see paragraph 23) an Ag-oxide composite material. Sato et al disclose that the material contains 1.7 at% Mg and 1.9 at% Ni. This equates to about 0.39 wt% Mg and about 1.06 wt% Ni. Sato et al teach (see paragraphs 15 and 16) that the alloy is subjected to internal oxidation. Sato et al teach (see paragraphs 23 and 24) that the alloy is processed into a pipe shape. Regarding the presence of other elements

in the composition of Sato et al, the present claims recite a composition "comprising" Ag and MgO, thus leaving the composition open to other elements, even in major amounts.

Regarding claim 4, Sato et al teach (see paragraphs 15, 16, 23 and 24an alloy with 0.39 wt% Mg and 1.06 wt% Ni that is subjected to internal oxidation and is in the shape of a pipe.

Regarding claim 5, Sato et al teach (see paragraphs 23 and 24) that the alloy is processed into a pipe shape.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2, 3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sistare et al (US 3,114,631) in view of Tsuji et al (US 4,502,899), Applicant's admission of prior art and Sato et al (JP 06-045132).

Sistare et al teach (see col 3, lines 38-48) a method of manufacturing an Ag-metal oxide composite. The method includes, dissolving and casting, followed by rolling and wire drawing. After this, the material is subjected to internal oxidation at 1550°F (843°C) for 72 hours. Then the material is subjected to a cold drawing treatment.

The intended use in the preamble of claim 2 has not been given patentable weight because the intended use of a known composition is not patentable. See In re King 231 USPQ 136 (Fed. Cir. 1986).

Sistare et al does not teach: (1) that the internal oxidation occurs in an oxygen atmosphere having a pressure of 3 to 10 atm; (2) that the material is formed into a "tape-like" or "pipe-like" shape; and, (3) that the material is Ag-Mg or Ag-Mg-Ni.

With respect to (1), Tsuji et al teach describe (see col 4, lines 9-12) a conventional process of internal oxidation for Ag-metal oxide materials. The processing parameters include a temperature of 750°C at an oxygen pressure of 4 atmospheres for 100 hours.

Therefore, it would have been obvious to one of ordinary skill in the art to have performed the conventional internal oxidation treatment of Tsuji et al because the processing parameters of Tsuji et al provide for a more efficient process than the older process of Sistare et al. Furthermore, Tsuji et al teach a treatment time of 100 hours and the presently claimed method is for treatment for 20-80 hours. It is within the skill of one in the art to find the optimum treatment time, based on the size of the article to be treated, the temperature and the oxygen content of the atmosphere. Evidence that these are known result effective variables can be seen in Krock et al described below. It would have been obvious to one of ordinary skill in the art to find the optimum treatment parameters, including treatment time, since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See *In re Aller* 105 USPQ 233.

With respect to (2), Applicant admits as prior art (see pages 2, lines 4-12 of the specification) that auxiliary material for use with a superconductive material is formed

into a tape or pipe and then a multi-layered composite structure is formed. Applicant admits (see page 3, lines 10-18) as prior art that Ag-metal oxide composites have been used as a superconductor auxiliary material.

Therefore, it would have been obvious to one of ordinary skill in the art to have made the Ag-metal oxide material of Sistare et al into a conventional "tape-like" or "pipe-like" material so that it could be used for forming the multi-layered composite structure with a superconductive material.

With respect to (3), Sato et al teach (see paragraphs 15, 16, 23 and 24) an Ag-oxide composite material. Sato et al disclose that the material contains about 0.39 wt% Mg and 1.06 wt% Ni and is subjected to internal oxidation.

Therefore, it would have been obvious to one of ordinary skill in the art to have used the material described by Sato et al in the process of Sistare et al and Tsuji et al because the material of Sato et al provides an alloy that (see paragraph 9) provides a high intensity oxide superconductive composite without degradation of superconductivity.

Regarding claim 6, Applicant's admission admits that the form of the alloy is a pipe. Therefore, it would have been obvious to one of ordinary skill in the art to have utilized the conventional pipe shape in order to take advantage of existing connections with superconducting materials.

Regarding claims 3, 7 and 8, the composition disclosed by Sato et al is within the claimed range. Regarding the presence of other elements in the composition of Sato et al, the present claims recite a composition "comprising" Ag and MgO, thus leaving the

composition open to other elements, even in major amounts. It would have been obvious to one of ordinary skill in the art to have used the material described by Sato et al in the process of Sistare et al and Tsuji et al because the material of Sato et al provides an alloy that (see paragraph 9) provides a high intensity oxide superconductive composite without degradation of superconductivity.

10. Claims 1, 4 and 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tenbrink (JP 06-045132) in view of Applicant's admission of prior art.

Tenbrink teaches (see claim 2 and paragraph 7) an Ag-oxide composite material. Tenbrink discloses that the material contains 0.1-0.25 wt%, in terms of elemental metal, of an oxide of Mg and 0.1-0.25 wt%, in terms of elemental metal, of an oxide of Ni. Tenbrink teach (see paragraph 7) that the alloy is subjected to dispersion hardening by oxidation. Regarding the presence of other elements in the composition of Tenbrink, the present claims recite a composition "comprising" Ag and MgO, thus leaving the composition open to other elements, even in major amounts.

However, Tenbrink does not teach that the material is a "pipe" or a "tape" Ag alloy for use in a process of treating a superconductive material.

Applicant admits as prior art (see pages 2, lines 4-12 of the specification) that auxiliary material for use with a superconductive material is formed into a tape or pipe and then a multi-layered composite structure is formed. Applicant admits (see page 3, lines 10-18) as prior art that Ag-metal oxide composites have been used as a superconductor auxiliary material.

Therefore, it would have been obvious to one of ordinary skill in the art to have utilized the Ag-metal oxide composite material of Tenbrink for the superconductor auxiliary material in the conventional shape of a tape or pipe because the material of Tenbrink provides an alloy with a coefficient of thermal expansion matched for use with a ceramic compound wire rod (see paragraph 5).

Regarding claim 4, Tenbrink teaches (as above) a composition with 0.1-0.25 wt% MgO and 0.1-0.25 wt% NiO.

Regarding claim 5, it would have been obvious to one of ordinary skill in the art to have utilized the Ag-metal oxide composite material of Tenbrink for the superconductor auxiliary material in the conventional shape of a pipe because the material of Tenbrink provides an alloy with a coefficient of thermal expansion matched for use with a ceramic compound wire rod (see paragraph 5).

11. Claims 2, 3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sistare et al (US 3,114,631) in view of Tsuji et al (US 4,502,899), Applicant's admission of prior art and Tenbrink (JP 06-045132).

Sistare et al teach (see col 3, lines 38-48) a method of manufacturing an Ag-metal oxide composite. The method includes, dissolving and casting, followed by rolling and wire drawing. After this, the material is subjected to internal oxidation at 1550°F (843°C) for 72 hours. Then the material is subjected to a cold drawing treatment.

The intended use in the preamble of claim 2 has not been given patentable weight because the intended use of a known composition is not patentable. See In re King 231 USPQ 136 (Fed. Cir. 1986).

Sistare et al does not teach: (1) that the internal oxidation occurs in an oxygen atmosphere having a pressure of 3 to 10 atm; (2) that the material is formed into a "tape-like" or "pipe-like" shape; and, (3) that the material is Ag-Mg or Ag-Mg-Ni.

With respect to (1), Tsuji et al teach describe (see col 4, lines 9-12) a conventional process of internal oxidation for Ag-metal oxide materials. The processing parameters include a temperature of 750°C at an oxygen pressure of 4 atmospheres for 100 hours.

Therefore, it would have been obvious to one of ordinary skill in the art to have performed the conventional internal oxidation treatment of Tsuji et al because the processing parameters of Tsuji et al provide for a more efficient process than the older process of Sistare et al. Furthermore, Tsuji et al teach a treatment time of 100 hours and the presently claimed method is for treatment for 20-80 hours. It is within the skill of one in the art to find the optimum treatment time, based on the size of the article to be treated, the temperature and the oxygen content of the atmosphere. Evidence that these are known result effective variables can be seen in Krock et al described below. It would have been obvious to one of ordinary skill in the art to find the optimum treatment parameters, including treatment time, since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See *In re Aller* 105 USPQ 233.

With respect to (2), Applicant admits as prior art (see pages 2, lines 4-12 of the specification) that auxiliary material for use with a superconductive material is formed

into a tape or pipe and then a multi-layered composite structure is formed. Applicant admits (see page 3, lines 10-18) as prior art that Ag-metal oxide composites have been used as a superconductor auxiliary material.

Therefore, it would have been obvious to one of ordinary skill in the art to have made the Ag-metal oxide material of Sistare et al into a conventional "tape-like" or "pipe-like" material so that it could be used for forming the multi-layered composite structure with a superconductive material.

With respect to (3), Tenbrink teaches (see claim 2 and paragraph 7) an Ag-oxide composite material. Tenbrink discloses that the material contains 0.1-0.25 wt%, in terms of elemental metal, of an oxide of Mg and 0.1-0.25 wt%, in terms of elemental metal, of an oxide of Ni. Tenbrink teach (see paragraph 7) that the alloy is subjected to dispersion hardening by oxidation.

Therefore, it would have been obvious to one of ordinary skill in the art to have used the material described by Tenbrink in the process of Sistare et al and Tsuji et al because the material of Tenbrink provides an alloy with a coefficient of thermal expansion matched for use with a ceramic compound wire rod (see paragraph 5).

Regarding claim 6, Applicant's admission admits that the form of the alloy is a pipe. Therefore, it would have been obvious to one of ordinary skill in the art to have utilized the conventional pipe shape in order to take advantage of existing connections with superconducting materials.

Regarding claims 3, 7 and 8, the composition recited in the present claim 3 overlaps the composition disclosed by Tenbrink. See In re *Malagari*, 182 USPQ 549

and MPEP 2144.05. It would have been obvious to one of ordinary skill in the art to have used the material described by Tenbrink in the process of Sistare et al and Tsuji et al because the material of Tenbrink provides an alloy with a coefficient of thermal expansion matched for use with a ceramic compound wire rod (see paragraph 5).

Response to Arguments

12. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Krock et al (US 3,930,849) teach a Ag-CdO composite material. Krock et al teach (see col 2, lines 57-63) that the oxidizing of the material is typically done at temperatures up to 850°C and for up to 120 hours, but these depend upon the shape, temperature and the oxygen content of the atmosphere (i.e.-partial pressure of O_2), thus showing that each of these is a result effective variable.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 6:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw
October 17, 2002

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700